

Applicant : Christopher J. Klein et al.  
Appln. No. : 09/862,857  
Page : 2

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1. (Original) A control system for remotely activating an automatically opening door comprising:
  - a plurality of transmitters held by different people, each transmitter transmits control signals;
  - a plurality of doors at least some of which being mounted in different buildings, each of said doors including an actuator for automatically opening and closing said door and a receiver electrically coupled to said actuator for receiving control signals from said transmitters and activating said actuator to open said door in response to the receipt of said control signals, wherein any one of said transmitters may be used to open any of said doors.
2. (Original) The control system of claim 1, wherein the control signals transmitted from said transmitters are RF signals.
3. (Original) The control system of claim 1, wherein the control signals transmitted from said transmitters are rolling code signals.
4. (Original) The control system of claim 3, wherein said rolling code control signals transmitted from said plurality of transmitters are encrypted and decrypted using a common predetermined manufacturer's key.
5. (Original) The control system of claim 4, wherein said common predetermined manufacturer's key is verified by the receiver using specified bits of a serial number as discrimination bits, the serial number being included in the rolling code signal transmitted from one of said transmitters.

Applicant : Christopher J. Klein et al.  
Appln. No. : 09/862,857  
Page : 3

6. (Original) The control system of claim 3, wherein said rolling code signals transmitted from said plurality of transmitters each include a 32-bit serial number.

7. (Currently amended) A receiver for an automatic door assembly having a door and an actuator coupled to the receiver for automatically opening and closing the door in response to an activation signal, said receiver comprising:

a receiver circuit for receiving ~~a rolling~~ hopping code control signal from a plurality of remote transmitters, the hopping code control signals each including a fixed serial number unique to the remote transmitter from which the control signal is transmitted, and a hopping code that changes with each transmission from the remote transmitter;

a memory in which a table is stored, said table including pairs of serial numbers and hopping codes of hopping code control signals as received from the plurality of remote transmitters; and

a control circuit coupled to the actuator, said memory, and said receiver circuit, wherein said control circuit is configured to ~~decrypt~~ determine whether the serial number and the hopping code of any received ~~rolling~~ hopping code control signal ~~using a specific public key~~ corresponds to one of the pairs of serial numbers and hopping codes previously stored in said table, and to determine whether any received consecutive hopping codes are decrypted that correspond to consecutive codes of a rolling code algorithm; said control circuit supplies the activation signal to the actuator when any received ~~consecutive hopping codes are decrypted that~~ code control signal has a serial number and hopping code pair that does not correspond to consecutive codes of the rolling code algorithm; a serial number and hopping code pair previously stored in said table.

8. (Currently amended) The receiver of claim 7, wherein the hopping code control signals received by said receiver circuit are RF signals.

Applicant : Christopher J. Klein et al.  
Appln. No. : 09/862,857  
Page : 4

9. (Currently amended) The receiver of claim 7, wherein the hopping code of the hopping code control signals are encrypted and said control circuit decrypts the rolling hopping code of the hopping code control signals received by said receiver circuit using a common predetermined manufacturer's key if the serial numbers correspond to any serial number already stored in said table.

10. (Currently amended) The receiver of claim 9, wherein ~~said common predetermined manufacturer's key is verified by~~ each encrypted hopping code includes the receiver circuit using specified bits of a the corresponding serial number as discrimination bits, and a synchronization counter that changes with each transmission, the serial number being included in the rolling code signal transmitted from the remote transmitters.

11. (Currently amended) The receiver of claim 7, wherein ~~said rolling code signals received by said receiver circuit each include~~ serial numbers are a 32-bit serial numbers.

12. (Original) An automatic door assembly comprising the receiver of claim 7 and further comprising a door and an actuator for opening and closing said door, said actuator is responsive to an activation signal supplied from said control circuit.

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

Applicant : Christopher J. Klein et al.  
Appln. No. : 09/862,857  
Page : 5

21. (Previously submitted) A secure system to allow multiple users to remotely open a plurality of electronically actuated doors in numerous locations, said system comprising:

a plurality of transmitters, said transmitters transmitting open door signals and including an encoder microchip comprising a circuit in which an identification value is stored, a circuit in which a counter value is stored, a logic circuit that changes the value of the counter value each time the transmitter is operated, and a non-linear encoding circuit to encode the counter value to generate a transmission value, and

a plurality of receivers in electrical communication with said plurality of electronically actuated doors to receive open door signals from said transmitters to initiate the opening of said doors in response to the receipt of said signals, each of said receivers including at least one decoder microchip comprising a circuit in which a second identification value is stored, a circuit in which the transmission value from an encoder microchip of a transmitter is received, a circuit in which the transmission value is decoded to generate a decoded counter value, and a circuit in which the second decoded counter value obtained from the previous transmission is stored.

22. (Previously presented) The system of claim 21, wherein each receiver comprises a number of decoder microchips, said number of decoder microchips corresponding to the number of transmitters in the system.

23. (New) A secure system to allow multiple users to remotely open/close a plurality of electronically actuated doors in numerous locations, said system comprising:

a plurality of transmitters, each of said transmitters transmitting open/close door signals including a fixed serial number unique to the transmitter and a hopping code that changes with each transmission; and

a plurality of receivers in electrical communication with said plurality of electronically actuated doors to receive open/close door signals from said transmitters to initiate the opening of said doors in response to the receipt of said open/close door signals, each of said receivers including a memory circuit including a table in which pairs of serial numbers and hopping

Applicant : Christopher J. Klein et al.  
Appln. No. : 09/862,857  
Page : 6

codes of any received open/close door control signals are stored, and a control circuit coupled to said memory circuit, wherein said control circuit is configured to supply an activation signal to open/close a door when any received open/close door signal has a serial number and hopping code pair that does not correspond to a serial number and hopping code pair previously stored in said table.

24. (New) The system of claim 23, wherein each of said transmitters encrypts the hopping code of the open/close door signals and said control circuit of said receiver decrypts the hopping code of the open/close door signals received by said receiver.

25. (New) The system of claim 24, wherein each encrypted hopping code includes specified bits of the corresponding serial number as discrimination bits, and a synchronization counter that changes with each transmission.

26. (New) The system of claim 25, wherein, if said control circuit determines that appropriate discrimination bits are present and if the serial number of an open/close door signal received by said receiver corresponds to any serial number already stored in said table, said control circuit proceeds to supply an activation signal to open/close a door.

27. (New) The system of claim 25, wherein before said control circuit supplies the activation signal, said control circuit determines whether appropriate discrimination bits are present in the received open/close door signal that corresponds to specified bits of the serial number.